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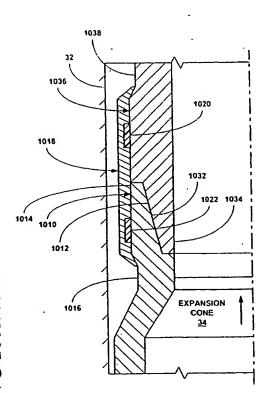
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[Continued on next page]

(54) Title: PROTECTIVE SLEEVE FOR THREADED CONNECTIONS FOR EXPANDABLE LINER HANGER



(57) Abstract: A tubular sleeve (1018) is coupled to and overlaps the threaded connection (1012, 1032) between a pair of adjacent tubular members (1016, 1038).

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GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SE, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

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Declaration under Rule 4.17:

of inventorship (Rule 4.17(iv)) for US only

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- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/06544

	SIFICATION OF SUBJECT MATTER				
IPC(7) US CL	: E21B 19/16 : 166/380, 85.3, 309, 387, 72, 73; 285/382.7, 39	98			
According to I	International Patent Classification (IPC) or to both na	tional classification and IPC			
	S SEARCHED				
Minimum doc U.S. : 16	umentation searched (classification system followed b 6/380, 85.3, 309, 387, 72, 73, 187, 195, 206, 207, 2	y classification symbols) 12, 216, 217; 285/382.7, 398, 55, 388	.1.		
	<u> </u>				
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched None					
Electronic dat EAST	a base consulted during the international search (name	e of data base and, where practicable, s	earch terms used)		
C. DOCU	JMENTS CONSIDERED TO BE RELEVANT				
Category *	Citation of document, with indication, where app	propriate, of the relevant passages	Relevant to claim No.		
Α	US 6,405,761 B1 (SHIMIZU et al) 18 June 2002, se	e entire document	1-120		
А	US 5,971,443 A (NOEL et al) 26 October 1999, see	entire document	i-120		
· A	US 5,309,621 A (O'DONNELL et al) 10 May 1994,	, see entire document	1-120		
- A	US 3,997,193 A (TSUDA et al) 14 December 1976, see entire document		1-120		
A	US 3,989,280 A (SCHWARZ) 02 November 1976,	1-120			
A	US 3,834,742 A (MCPHILLIPS) 10 September 197-	1-120			
A	US 3,579,805 A (KAST) 25 May 1971, see entire document		1-120		
A	US 2,647,847 A (BLACK et al) 04 August 1953, see entire document		1-120		
x	US 4,693,498 A (BLAUGH et al) 15 september 1987, see Fig. 2a and 2b.		. 54		
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Further	r documents are listed in the continuation of Box C.	See patent family annex.			
"A" documen	pecial categories of cited documents: I defining the general state of the art which is not considered to be	"T" later document published after the in date and not in conflict with the appl principle or theory underlying the in-	ication but cited to understand the		
	ular relevance  pplication or patent published on or after the international filing date	"X" document of particular relevance; the considered novel or cannot be considered novel or taken alone	e claimed invention eannot be lered to involve an inventive step		
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)		"Y" document of particular relevance; the considered to involve an inventive at combined with one or more other su	ep when the document is		
"O" document referring to an oral disclosure, use, exhibition or other means		being obvious to a person stilled in	the art		
	a published prior to the international filing date but later than the date claimed	"2" document member of the same pater			
Date of the actual completion of the international search		Date of mailing of the international se	earch report		
30 July 2003 (30.07.2003)		DOS MIN 60			
Name and mailing address of the ISA/US		Authorized offices	<b>1</b> 4		
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# INTERNATIONAL SEARCH REPORT

Sategory *	Citation of document, with i	indication, where appropriate, of	the relevant passages	1	Relevant to claim No.	
х	US 6,275,556 B1 (KINNEY et al) 14 August 2001. see Fig. 3			'	.54	
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Form PCT/ISA/210 (second sheet) (July 1998)

### INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/06544

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)				
This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:				
1.		Claim Nos.: because they relate to subject matter not required to be searched by this Authority, namely:		
2.	<u> </u>	Claim Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:		
3.	6.4(a).	Claim Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule		
Во	× II OI	bservations where unity of invention is faciling (Continuation of Item 2 of 1131 succes)		
		tional Searching Authority found multiple inventions in this international application, as follows: Continuation Sheet		
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1.	$\boxtimes$	As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.		
2.		As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.		
3.		As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:		
4.		No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:		
		···		
R	emark o	The additional search fees were accompanied by the applicant's protest.		
		No protest accompanied the payment of additional search fees.		
Fo	rm PCT/	ISA/210 (continuation of first sheet(1)) (July 1998)		

	PCT/US03/06544	
INTERNATIONAL SEARCH REPORT		

#### BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

The inventions listed as Groups I-IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The independent claims of the Group-I inventions all require the radial-plastic deformation of a jointed abular connection whereas the independent claims of Group II inventions make no such requirement. Group III claims differ in that the independent claims require the radial-plastic deformation of the tubular connections in a method and/or apparatus used in extracting geothermal energy from a geothermal well whereas the Group IV invention makes no such deformation requirement. The Group I and II claims further differ in requiring tubular connections involving internal or external tubular threads with corresponding internal or external threaded sleeve ends. The independent claims of Groups III and IV all require their use as a liner in the completion of a well to be used in extracting geothermal energy.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-53, drawn to a "Method."

Group II, claim(s) 54-110, drawn to an "Apparatus."

Group III, claim(s) 111-119, drawn to a "Method and Apparatus for Extracting Geothermal Energy."

Group IV, claim(s) 120, drawn to an "Apparatus for Extracting Geothermal Energy."